

THE FROGS OF AUSTRALIA.

BY GERARD KREFT.

BATRACHIA SALIENTIA.

A. Aglossa.

Aglossa diplosiphona.

Fam. MYOBATRACHIDÆ.

Myobatrachus (Schleg.)*Myobatrachus paradoxus* (Schleg.) Swan River.

B. Ophistoglossa.

Ophistoglossa oxydactyla.

Fam. RANIDÆ.

Myxophyes (Gthr.).

Myxophyes fasciolatus (Gthr.). The geographical range of this new genus appears to extend much further than I suspected, as Mr. George Masters has lately discovered a fine large specimen near Kiama, Illawarra district. It is singular that this frog should occur on the Clarence and Richmond, and at Illawarra, without being ever observed near Sydney.

Fam. CYSTIGNATHIDÆ.

Cystignathus (Wagl.).

Cystignathus Georgianus (D. and B.). King George's Sound and South Australia.

Pterophrynus (Peters). Sydney, Illawarra, Queensland.

Pterophrynus affinis (Gunther). This new species is described by Dr. Gunther in the Proceedings of the Zoological Society, 1864, page 47. Habitat, Western Australia.

Pterophrynus Tasmaniensis (Gthr.). Proceedings Zoological Society, 1864, page 48. Habitat, Tasmania.

Pterophrynus lævis (Gthr.). Proceedings Zoological Society, 1864, page 48. Habitat, Tasmania.

Limnodynastes (Fitzinger).

Limnodynastes dorsalis (Gray). Australia generally. This species has been observed at Swan Hill, South Australia, and on the east coast from Cape Howe to Port Denison.

Limnodynastes Bibronii (Peters). South Australia. The Australian Museum collection contains specimens of this frog captured at Dabbee, Ryalstone, New South Wales.

Limnodynastes Tasmaniensis (Gthr.) This is a very common form, widely distributed over Tasmania and the southern portions of Australia.

Limnodynastes affinis (Gthr.) Clarence River.

Limnodynastes Kreftii (Gthr.) Common near Sydney and the southern portion of Australia.

Limnodynastes ornatus (Gray). Common on the north-east coast of Australia, in particular near Port Denison.

Neobatrachus (Peters).

Neobatrachus fictus (Peters). South Australia.

Platyplectrum (Gthr.)

Platyplectrum marmoratum (Gthr.) Clarence River.

Fam. DISCOGLOSSIDÆ.

Chiroleptes (Gthr.)

Chiroleptes Australis (Gthr.) North-east and north coast, common near Port Denison.

Fam. ASTEROPHRYDIDÆ.

Cryptotis (Gthr.)

Cryptotis brevis (Gthr.) Clarence, Richmond, and Hastings Rivers, Queensland (neighborhood of Ipswich).

Fam. ALYTIDÆ.

Heleioforus (Gray).

Heleioforus alleopunctatus (Gray). Western Australia (particularly King George's Sound), Murray River, North Australia (?).

Fam. UPEROLEIDÆ.

Uperoleia (Gray).

Uperoleia marmorata. Western Australia, South Australia, Sydney, Illawarra district, Clarence and Hastings River, Brisbane.

Fam. BRACHYCEPHALIDÆ.

Pseudophryne (Fitzinger).

Pseudophryne Australis (Gray). All the specimens of this species which came under my notice were captured in the neighborhood of Sydney.

Pseudophryne Bibronii (D. and L.) Tasmania, and southern portions of Australia.

Pseudophryne Bibronii (variety). This may probably be the type of a new species; it inhabits the Clarence River district.

Pseudophryne (new species). This is a very distinct species, and the largest of this genus yet discovered; it is of a uniform brick red color on the back, beneath black and white marbled. Hunter River district.

Fam. ENGYSTOMATIDÆ.

Chelydobatrachus (Gray).

Chelydobatrachus Gouldii (Gray). West Australia.

OPHISTOGLOSSA PLATYDACTYLA.

HYLINA.

Fam. POLYPEDATYDÆ.

Hyperolius (Rapp).

Hyperolius bicolor (Gthr.) Blue Mountains, Clarence River, common near Port Denison.

Fam. HYLIDÆ.

Litoria (Tschudi.)

Litoria Freycineti (Bibr.) Port Curtis.

Litoria nasuta (Gray). Sydney, Port Essington.

Litoria punctata (Dum.) Sydney.

Litoria marmorata (Dum.) Sydney, Clarence River.

Litoria Wilcoxii (Gthr.) Clarence River, Port Curtis.

Hyla (Burm).

Hyla Ewingii (D. and B.) Sydney and east coast of Australia, Tasmania.

Hyla rubella (Gray). Port Essington and Port Denison.

Hyla Peronii (Bibr.) Port Essington, east coast generally, and Tasmania.

Hyla Jervisiensis (D. and B.) Jervis Bay.

Hyla Adelaidensis (Gray). Adelaide and King George's Sound.

Hyla aurea (Less). Australia generally.

Hyla Verreauxii (Dum.) Sydney, Clarence River.

Hyla citropus (P. and L.) Sydney.

Hyla Krefftii (Gthr.) Sydney.

Hyla phyllochnoa (Gthr.) Sydney, Brisbane.

Fam. PELODRYADIDÆ.

Pelodryas (Gthr.)

Pelodryas cæruleus (White).

The above-enumerated 39 species of frogs have with few exceptions a very wide distribution, but are principally inhabitants of the eastern and southern portion of the Australian continent. Of the west and north-west coast we know as yet little or nothing. It is probable, however, that when these regions are better explored by naturalists many more new genera and species will be discovered, and I am confident to see our Batrachio-fauna numbering more than a hundred species a few years hence.

With regard to the frogs of Tasmania we are very much in arrear, for looking over the British Museum catalogue we find the following species only mentioned as inhabiting that island :-

Limnodynastes Tasmaniensis

Pseudophryne Bibronii

Hyla Ewingii

Hyla Peronii

Hyla aurea.

The neighborhood of Sydney is very rich in *Batrachians*, and I have found, besides several new species, many forms which previously were only known from the north-east and west coasts. There are altogether 19 species, namely:—

<i>Pterophrynus varius</i>	
<i>Limnodynastes dorsalis</i>	
————— <i>Krefftii</i>	
<i>Uperoleia marmorata</i>	
<i>Pseudophryne Australis</i>	
————— <i>Bibronii</i>	
<i>Hyperolius bicolor</i> ,	30 miles from Sydney.
<i>Litoria nasuta</i>	} Probably varieties of <i>L. nasuta</i> .
———— <i>punctata</i>	
———— <i>marmorata</i>	
<i>Hyla Ewingii</i>	
———— <i>Peronii</i>	
———— <i>aurea</i>	
———— new species	} Not yet described
———— new species	
———— <i>citropus</i>	
———— <i>Krefftii</i>	
———— <i>phyllochroa</i>	
And <i>Pelodryas cæruleus</i> .	

Believing that the habits of our *Batrachians* have never been properly recorded, I will give some of my observations:—If we except a few species, we find that by far the larger number of them are nocturnal; those observed in the day time are generally asleep, though some are active, but perhaps disturbed only. During the breeding season, however (about November), many otherwise nocturnal frogs may be seen in broad daylight in search of their mates, the males calling in their loud, often not unpleasing, voice, which at the beginning of dusk is always loudest. The greater number of species have deposited their ova in the beginning of December, though I have reason to believe that some species breed at all seasons, for I have taken *Pseudophryne Australis* in midwinter full of ova, and have observed larva of this and of several other species in pools of water about the same time. All the *Hylidæ*, however, deposit their ova only once a year, generally in November and December.

The localities in which the different species are found vary considerably. Of *Myxophyes fasciolatus* I know little, but what I have seen of the single living specimen once in my possession I believe that this frog is remarkably fond of lying buried under moss in water, never making its appearance before dark. The members of the family *Cystignathidæ* frequent the water much more than the land, whilst such

genera as *Uperoleia* and *Pseudophryne* give the preference to moist or damp places, and are never seen in the day time; they hide under stones or logs of wood, and never climb, nor do they swim about in swamps or pools.

Of the OPHISTOGLOSSA PLATYDACTYLA very few take freely to the water, though some, as *Hyla aurea*, appear to live in it exclusively. Most of the frogs of this group frequent shrubs or trees, and all have the power to change their color.

Hyperolius bicolor I have observed asleep upon orange trees and other shrubs during the day, and taken several specimens by the light of a lanthorn in swampy places. At first sight they look exactly like the young of *Hyla aurea*, but the absence of vomerine teeth, and the delicate light green color upon the back, and pale orange between the legs, soon determines its true character. It is a remarkable fact that this frog has as yet been found in a few localities only, all wide apart from each other. The first specimen was received from Port Denison, and several others from Port Curtis and Brisbane. I am confident that it does not exist in the immediate neighborhood of Sydney, but some 50 or 60 miles from this city, at the foot of the Blue Mountains, several specimens were taken by me.

All the frogs belonging to the genus *Litoria* are found in swampy places in particular localities covered with long grass or reeds; they make most extraordinary leaps, as much as six feet high, and may be often met with in broad daylight. The genus *Hyla* proper, if we except *Hyla aurea*, is always found on shrubs or trees, some hiding under bark during the day, as *Hyla Ewingii*, *Peronii*, *Adelaidensis*, and *Krefftii*; *Hyla citropus* inhabits the tops of high trees, and is, therefore, seldom captured during the summer, whilst during the cold season it retires under stones in creek beds. *Hyla phyllochroa* frequents fern groves, and *Pelodryas cæruleus* is quite a domestic creature, taking up its quarters under the roof of dwelling-places, in water-spouts, post-holes, &c., and it has proved itself a surer prophet than Mr. Saxby—the deep croak of the male being a certain sign that rain will not long be wanting. This frog has the widest range of all; it is found from South Australia to the east coast, and from Melbourne to Port Essington and New Guinea.